

Remarks

Claims 1-28 are pending. Claims 1-6 and 15-20 are rejected, while claims 7, 9-14, 21, and 23-28 stand withdrawn. Applicants respectfully traverse the rejection and request allowance of claims 1-6 and 15-20.

Claims 1-3, 6, 15-17, and 20 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent 4,912,805 (Krasznai et al.) in view of Great Britain Patent 2,041,741 (Stubbs). Inasmuch as the rejection applies to the claims as amended, Applicants respectfully traverse the rejection.

Independent claims 1 and 15 require at least one row of bristle tufts disposed on the brushroll body. The at least one row of bristle tufts comprise a first tuft of a first effective length from the brushroll body and at least a second tuft of a second effective length that is different from the first effective length. The first tuft is oriented at a first angle with respect to a radius direction of the brushroll body and the second tuft is oriented at a second angle that is different from the first angle.

Krasznai does not disclose a first bristle tuft at a first angle from a radius direction and a second bristle tuft at a second angle that is different from the first angle. In contrast, Krasznai only discloses radially oriented bristle tufts. Krasznai does not disclose even a single angled bristle tuft.

Stubbs does not disclose a row of bristle tufts including first tufts and second tufts, with a first tuft being oriented at a first angle and a second tuft being oriented at a second angle that is different from the first angle. Instead, FIG. 3 of Stubbs shows two rows 2 of tufts. All of the tufts of each row 2 are angled. The teaching of angling an entire row of tufts in Stubbs does **not** teach the angling of individual tufts of a row and does **not** teach a first tuft at a first angle and a second tuft at a second angle.

The combination of Krasznai and Stubbs does not produce a first tuft that is oriented at a first angle with respect to a radius direction of the brushroll body and a second tuft that is oriented at a second angle that is different from the first angle. The combination of Krasznai and Stubbs therefore does not produce independent claims 1 and 15 of the present invention.

Stubbs teaches that the angle of a tuft with respect to a radius can vary between one degree and six degrees. Stubbs refers to this as a “lead angle.” Stubbs teaches that the lead

angle can be varied within this given range according to 1) a bristle material, 2) the length of the tufts, 3) the speed of rotation of the brushroll, and 4) the amount of side angle of a tuft (see lines 12-16, lines 37-39, and lines 62-64).

The Office Action appears to be taking this teaching and claiming that Stubbs therefore teaches tufts of bristles at different angles in the tufts of a row. This is incorrect. Stubbs does not teach or suggest any non-uniformity of bristle tufts. On the contrary, the tufts in Stubbs are depicted as being completely uniform. Note that FIG. 3 and FIGS. 4a, 4b, and 4c show rows of tufts that are uniform. FIG. 1 shows a row of tufts that is non-uniform only with regard to a lateral angling of the tufts, such that a vacuum cleaner according to Stubbs would offer a greater cleaning ability to the sides of the brushroll.

As was previously stated, that Stubbs teaches angling a row of tufts does not teach separately and differently angling individual tufts in a row of tufts. The Office Action states that “Stubbs suggests that tufts of differing lengths will have differing angles to achieve [sic] the proper flick action.” This is correct, but yet does not teach the varying of tufts in a row of tufts. This statement attempts to imply that Stubbs includes tufts of multiple varying angles. This is simply incorrect. What Stubbs actually discloses is that the angle of a row of tufts can be varied, and can be varied according to the length of a row of tufts (“length of the *tufts* of bristles” (emphasis added)).

Likewise, Krasznai not only does not teach angled tufts, but Krasznai does not teach bristle tufts at different angles to each other. A proper combination of Krasznai and Stubbs therefore does not produce the first and second tufts at first and second angles according to the invention.

The Office Action, at page 3, last paragraph, asserts that: “It should also be noted that claims 1 and 15 do not set forth that the first and second angles are different.” This is simply incorrect. The previous response, submitted on May 7, 2007, included the amendment to independent claims 1 and 15 that stated: “with the first tuft being oriented at a first angle with respect to a radius direction of the brushroll body and with the second tuft being oriented at a second angle **that is different from the first angle.**”

Krasznai teaches having different tuft lengths in order to accommodate differing floor surfaces (see col. 1, line 65 to col. 2, line 2).

Stubbs teaches angling a row of tufts for the purpose of increasing a flick action in order to increase a dust collection property, *i.e.*, a cleaning effectiveness (see lines 6-11).

Stubbs teaches a flicking action with respect to "the ground," which is implicitly a solid, smooth, level floor surface. In contrast, the short tufts of Krasznai are for contacting carpeting. A flicking action would not work in the brushroll of Krasznai and would not provide any benefit to Krasznai. Therefore, the combination would be unworkable.

Independent claims 1 and 15 therefore include features that are neither taught nor suggested by any of the cited references. Claims 2-3, 6, 16-17, and 20 are allowable for the same reasons as claims 1 and 15.

Claims 4 and 18 stand rejected under 35 U.S.C. § 103(a) as being obvious over Krasznai and Stubbs and further in view of U.S. Patent No. 2,459,007 (Taylor). Claims 4 and 18 depend from independent claims 1 and 15 and therefore are patentable for the reasons previously discussed.

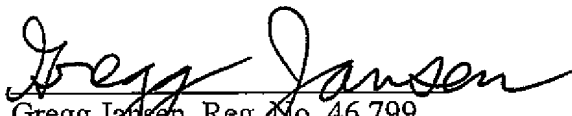
Claims 5 and 19 stand rejected under 35 U.S.C. § 103(a) as being obvious over Krasznai and Stubbs and further in view of U.S. Patent No. 3,188,673 (Newman). Claims 5 and 19 depend from independent claims 1 and 15 and therefore are patentable for the reasons previously discussed.

Applicants respectfully request allowance of claims 1-6 and 15-20.

Please feel free to call me to discuss the patentability of the pending claims.

Respectfully submitted,

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